



ATTORNEY DOCKET NO.
10/632,419-P022WUD1

PATENT
APPLICATION NO. 10/632,419

UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: James M. Tour et al.

Group Art Unit: 1713

Serial No.: 10/632,419

Filed: August 1, 2003

Title: CARBON NANOTUBES DERIVATIZED
WITH DIAZONIUM SPECIES

CERTIFICATE OF MAILING

I hereby certify that this Information Disclosure Statement along with attached SB/08A-B (Form 1449) and 27 references, are being deposited with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on February 26, 2004.

GRACIE SOLIS

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

This Information Disclosure Statement is being submitted in connection with the above-identified application for patent. Applicant submits herewith patents, publications or other information of which it is aware, which it believes may be material to the patentability of this application and in respect of which there may be a duty to disclose in accordance with 37 C.F.R. § 1.56.

While this Information Disclosure Statement may be "material" pursuant to 37 C.F.R. § 1.56, it is not intended to constitute an admission that any patent, publication or other information referred to herein is "prior art" for this invention unless specifically designated as such.

In accordance with 37 C.F.R. § 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 C.F.R. § 1.56(a) exists.

**ATTORNEY DOCKET NO.
11321-P022WUD1**


**PATENT
APPLICATION NO. 10/632,419**

The attached form, PTO-1449, provides a listing of patents, publications, or other information as required by 37 C.F.R. § 1.98(a)(1).

Also in accordance with 37 C.F.R. § 1.98(a)(2)(i), no copies of U.S. patents and pending applications identified on the attached Form PTO-1449 are required for all U.S. patent applications filed after June 30, 2003. Therefore, only copies of foreign patent documents and non-patent literature referenced on the attached Form PTO-1449 are submitted herewith.

Applicant believes that no fee is due at this time. However, the Commissioner is hereby authorized to credit any overpayment or charge for inadvertently omitted fees to Deposit Account No. 23-2426 (11321-P022WUD1).

Respectfully submitted,

By: 

Ross Spencer Garsson
Reg. No. 38,150

P.O. Box 50784
Dallas, Texas 75201
(512) 370-2870

AUSTIN_1\242867\1
11321-P022WUD1 02/26/2004



In Place of FORM PTO-1449 (Modified)

Serial Number: 10/632,419
Applicants: James M. Tour et al.
Filing Date: August 1, 2003
Group: 1713
Atty. Docket Number: 11321-P022WUD1

**LIST OF PATENTS AND PUBLICATIONS FOR
APPLICANTS' INFORMATION DISCLOSURE
STATEMENT**

Reference Designation

U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
____AAA	5,547,748	08/20/1996	Ruoff et al.	428	323	
____ABA						
____ACA						

FOREIGN PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Country	Class	Subclass	Translation Yes No
____ADA						
____AEA						
____AFA						

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

Examiner
Initial

____AGA	AIHARA, "Lack of Superaromaticity in Carbon Nanotubes," <i>Journal of Physics Chem.</i> , Volume 98, pp. 9773-9776 (1994).
____AHA	ALLONGUE et al., "Covalent Modification of Carbon Surfaces by Aryl Radicals Generated from the Electrochemical Reduction of Diazonium Salts," <i>J. Am. Chem. Soc.</i> , Volume 119, pp. 201-207 (1997).
____AIA	CHEN et al., "Solution Properties of Single-Walled Carbon Nanotubes," <i>Science</i> , Volume 282, pp. 95-98 (October 2, 1998).
____AJA	CHEN et al., "Room-temperature negative differential resistance in nanoscale molecular junctions," <i>Applied Physics Letters</i> , Volume 77, Number 8, pp. 1224-1226 (August 21, 2000).
____AKA	CHEN et al., "Chemical attachment of organic functional groups to single-walled carbon nanotube material," <i>Journal of Materials Research</i> , Volume 13, Number 9, pp. 2423-2431 (September 1998).
____ALA	CUI et al., "Functional Nanoscale Electronic Devices Assembled Using Silicon Nanowire Building Blocks," <i>Science</i> , Volume 291, pp. 851-853 (February 2, 2001).
____AMA	DELAMAR et al., "Modification of Carbon Fiber Surfaces by Electrochemical Reduction of Aryl Diazonium Salts: Application to Carbon Epoxy Composites," <i>Carbon</i> , Volume 35, Number 6, pp. 801-807 (1997).
____ANA	DELAMAR et al., "Covalent Modification of Carbon Surfaces by Grafting of Functionalized Aryl Radicals Produced from Electrochemical Reduction of Diazonium Salts," <i>J. Am. Chem. Soc.</i> , Volume 114, pp. 5883-5884 (1992).
____AOA	EBBESSEN et al., "Carbon Nanotubes," <i>Annual Review of Materials Science</i> , Volume 24, pp. 235-264 (1994).
____APA	EBBESSEN et al., "Large-Scale Synthesis of Carbon Nanotubes," <i>Nature</i> , Volume 358, pp. 220 (July 16, 1992).
____AQA	FUHRER et al., "Crossed Nanotube Junctions," <i>Science</i> , Volume 288, pp. 494-497 (April 21, 2000).
____ARA	HUANG et al., "Directed Assembly of One-Dimensional Nanostructures into Functional Networks," <i>Science</i> , Volume 291, pp. 630-633, (January 26, 2001).
____ASA	IIJIMA et al., "Helical microtubules of graphitic carbon," <i>Nature</i> , Volume 354, pp. 56-58 (November 7, 1991).
____ATA	JOST et al., "Diameter grouping in bulk samples of single-walled carbon nanotubes from optical absorption spectroscopy," <i>Applied Physics Letters</i> , Volume 75, Number 15, pp. 2217-2219 (October 11, 1999).
____AUA	KOSYNKIN et al., "Phenylene Ethynylene Diazonium Salts as Potential Self-Assembling Molecular Devices," <i>Organic Letters</i> , Volume 3, Number 7, pp. 1993-995 (2001).

- ____AVA LI et al., "Temperature dependence of the Raman spectra of single-wall carbon nanotubes," *Applied Physics Letters*, Volume 76, Number 15, pp. 2053-2055 (April 10, 2000).
- ____AWA LIANG et al., "Electronic Structures and Optical Properties of Open and Capped Carbon Nanotubes," *J. Am. Chem. Soc.*, Volume 122, pp. 11129-11137 (2000).
- ____AXA LIU et al., "Fullerene Pipes," *Science*, Volume 280, pp. 1253-1256 (May 22, 1998).
- ____AYA NIKOLAEV et al., "Gas-phase catalytic growth of single-walled carbon nanotubes from carbon monoxide," *Chemical Physics Letters*, Volume 313, pp. 91-97 (November 5, 1999).
- ____AZA OBUSHAK et al., "Arenediazonium Tetrachlorocuprates (II). Modification of the Meerwein and Sandmeyer Reactions," *Tetrahedron Letters*, Volume 39, pp. 9567-9570 (1998).
- ____BAB ORTIZ et al., "Electrochemical modification of a carbon electrode using aromatic diazonium salts. 2. Electrochemistry of 4-nitrophenyl modified glassy carbon electrodes in aqueous media," *Journal Electroanalytical Chemistry*, Volume 455, pp. 75-81 (1998).
- ____BBB RAO et al., "Functionalised carbon nanotubes from solutions," *Chem. Commun.*, pp. 1525-1526 (1996).
- ____BCB RAO et al., "Diameter-Selective Raman Scattering from Vibrational Modes in Carbon Nanotubes," *Science*, Volume 275, pp. 187-191 (January 10, 1997).
- ____BDB RICHTER et al., "Theory of Size-Dependent Resonance Raman Scattering from Carbon Nanotubes," *Physical Review Letters*, Volume 79, Number 14, pp. 2738-2740 (October 6, 1997).
- ____BEB SABY et al., "Electrochemical Modification of Glassy Carbon Electrode Using Aromatic Diazonium Salts. 1. Blocking Effect of 4-Nitrophenyl and 4-Carboxyphenyl Groups," *Langmuir*, Volume 13, pp. 6805-6813 (1997).
- ____BFB WONG et al., "Covalently functionalized nanotubes as nanometre-sized probes in chemistry and biology," *Nature*, Volume 394, pp. 55-58 (1998).
- ____BGB WU et al., "Finite size effects in carbon nanotubes," *Applied Physics Letters*, Volume 77, Number 16, pp. 2554-2556 (October 16, 2000).

Examiner:

Date Considered:

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

AUSTIN_1\244409\1
11321-P022WUD1 02/26/2004